!	Application No.	Applicant(s)	N
Notice of Allowability	10/700,446	HIGASHIMATA ET AL.	
Notice of Allowability	Examiner	Art Unit	
Y	Yonel Beaulieu	3661	
The MAILING DATE of this communication apperature All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED in or other appropriate communication is supplication is supplication.	in this application. If not included nunication will be mailed in due cou	rse. THIS
1. This communication is responsive to <u>papers filed</u> .			
2. The allowed claim(s) is/are <u>1-20</u> .			
3. \square The drawings filed on <u>05 November 2003</u> are accepted by	the Examiner.		
 4. Acknowledgment is made of a claim for foreign priority unerstanding a) All b) Some* c) None of the: 1. Certified copies of the priority documents have 	e been received.		
2. Certified copies of the priority documents have	• •		
Copies of the certified copies of the priority do	cuments have been receive	d in this national stage application	from the
International Bureau (PCT Rule 17.2(a)).			
* Certified copies not received:			
Applicant has THREE MONTHS FROM THE "MAILING DATE" on noted below. Failure to timely comply will result in ABANDONM THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.	of this communication to file ENT of this application.	e a reply complying with the require	ements
5. A SUBSTITUTE OATH OR DECLARATION must be submit INFORMAL PATENT APPLICATION (PTO-152) which give	itted. Note the attached EXA s reason(s) why the oath o	AMINER'S AMENDMENT or NOTI r declaration is deficient.	CE OF
6. \square CORRECTED DRAWINGS (as "replacement sheets") mus	it be submitted.		
(a) including changes required by the Notice of Draftspers		w (PTO-948) attached	
1) hereto or 2) to Paper No./Mail Date		•	
(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date		r in the Office action of	
Identifying indicia such as the application number (see 37 CFR 1. each sheet. Replacement sheet(s) should be labeled as such in the	.84(c)) should be written on the header according to 37 CF	he drawings in the front (not the bac FR 1.121(d).	k) of
7. DEPOSIT OF and/or INFORMATION about the deposit attached Examiner's comment regarding REQUIREMENT F	SIT OF BIOLOGICAL MATE FOR THE DEPOSIT OF BIO	ERIAL must be submitted. Note DLOGICAL MATERIAL.	the
Attachment(s)			
1. ⊠ Notice of References Cited (PTO-892)	5. Notice of In	nformal Patent Application (PTO-15	52)
2. Notice of Draftperson's Patent Drawing Review (PTO-948)	6. Interview Si	ummary (PTO-413),	
3. ☑ Information Disclosure Statements (PTO-1449 or PTO/SB/08 Paper No./Mail Date 11/05/03	8), 7. Examiner's	/Mail Date Amendment/Comment	
4. Examiner's Comment Regarding Requirement for Deposit	8. 🛛 Examiner's	Statement of Reasons for Allowan	ice
of Biological Material	9. 🔲 Other	ري. م لاي.	
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Allowable Subject Matter

Claims 1 – 20 are allowed.

The prior art of record fail to teach a slip control system of an automatic transmission with a torque converter, comprising, among other limitations, a control unit that feedback-controls an engagement capacity and comprises:

- (a) a target slip-rotation speed calculation section that estimates a target slip-rotation speed based on engine-and-vehicle operating conditions;
- (b) a pre-compensating section that pre-compensates for the target slip-rotation speed to produce a target slip-rotation speed correction value;
- (c) a slip-rotation speed deviation calculation section that calculates a slip-rotation speed deviation between the target slip-rotation speed correction value and the actual slip-rotation speed;
- (d) a feedback compensating section that feedback-controls the engagement capacity based on the slip-rotation speed deviation to bring the actual slip-rotation speed closer to the target slip-rotation speed; and
- (e) a dead-time processing section that compensates for the target slip-rotation speed correction value, considering a dead time of dynamic characteristics peculiar to the slip control system in the target slip-rotation speed correction value, to supply a dead-time compensated output to the feedback compensating section.

The system further comprising a pre-compensating section comprises (b) a precompensating section comprising (i) a first compensating filter that pre-compensates for the target slip-rotation speed to produce a first target slip-rotation speed correction value corresponding to a reference-model output from an expression $\omega_{SLPTC1} = G_R(s) x \omega_{SLPT} \text{ where } \omega_{SLPTC1} \text{ is the first target slip-rotation speed correction}$ value, $G_R(s)$ is a reference model that is set as a transfer function suited to a desired response determined based on designer's wishes, and ω_{SLPT} is the target slip-rotation speed, and (ii) a second compensating filter that pre-compensates for the target slip-rotation speed to produce a second target slip-rotation speed correction value from an expression $\omega_{SLPTC2} = G_M(s) \times \omega_{SLPT}$ where $G_M(s)$ corresponds to a feed-forward compensator, which is defined by an expression $G_M(s) = G_R(s)/P(s)$, where $G_R(s)$ is the reference model and P(s) is a transfer function that is obtained by modeling a lockup-clutch slip-rotation section serving as a controlled system.

Conclusion

Ichinoseki et al. (JP 09265745 A) teaches a torque transmission clutch formed by a friction force, wherein, among other things, an excessive torque exceeding the friction force makes the clutch slip and this controls the transmission of the torque within a prescribed range, but *not in the manner of the present claimed invention*.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yonel Beaulieu whose telephone number is (703) 305-4072. The examiner can normally be reached on M-R, from 0900-1600.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas BLACK can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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